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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,182	06/26/2003	Tsutomu Hashizume	Q76316	1591
65565	7590	05/31/2007		
SUGHRUE-265550			EXAMINER	
2100 PENNSYLVANIA AVE. NW			FEGGINS, KRISTAL J	
WASHINGTON, DC 20037-3213				
			ART UNIT	PAPER NUMBER
			2861	
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			05/31/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/606,182

Applicant(s)

HASHIZUME ET AL..

Examiner

K. Feggins

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/14/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 21, 22, 30 & 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Hasegawa et al. (US 5,530,465).

Hasegawa et al. disclose the following claimed limitations:

* regarding claims 21 & 30 an ink jet recording head formed by a method

(Abstract);

* forming a first/lower/ electrode layer/104/ on a diaphragm/103/ (figs 2A-C);

* forming a piezoelectric layer/105/ on the first/lower/ electrode layer/104/ (figs 2A-C);

* forming a second/upper/ electrode layer/106/ on the piezoelectric layer/105/ (figs 2A-C);

* etching simultaneously through the second/upper/ electrode layer/106/, the piezoelectric layer/105/, and the first/lower/ electrode layer/104/ so that a portion/the ends/ of the diaphragm/103/ is exposed (figs 2A-C, col 9, lines 41-67; etching pertains to the method of making, it is not a structural feature of the device)

* regarding claims 22 & 31, wherein the diaphragm/103/ is attached to a substrate/101/(figs 2A-C).

* further regarding claim 30, etching completely through at least the second electrode layer and the piezoelectric layer so that a portion of the diaphragm is exposed (figs 2A-C, col 9, lines 41-67).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 23, 24, 32, 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al. (US 5,530,465) in view of Miyata et al. (US 5,754,205).

Hasegawa et al. disclose all of the claimed limitations except for the following:

* regarding claims 23 & 32, wherein a nozzle plate is attached to the substrate.

* regarding claims 24 & 33, wherein the nozzle plate is formed with a nozzle orifice.

Miyata et al. disclose the following claimed limitations:

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* regarding claims 23 & 32, wherein a nozzle plate/53/ is attached to the substrate (col 7, lines 39-42, fig 3b) for the purpose of providing a plurality of nozzle openings fixed to one face of the substrate.

* regarding claims 24 & 33, wherein the nozzle plate/53/ is formed with a nozzle orifice/52/ (col 7, lines 39-42, fig 3b) for the purpose of ejecting ink drops through the nozzle opening.

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to utilize a nozzle plate is attached to the substrate; and a nozzle plate that is formed with a nozzle orifice, taught by Miyata et al. into Hasegawa et al. for the purposes of providing a plurality of nozzle openings fixed to one face of the substrate and ejecting ink drops through the nozzle opening.

Allowable Subject Matter

5. Claims 25-29 are allowed.

The following is an examiner's statement of reasons for allowance: The primary reason for allowance of claims 25-29 is the inclusion of a method steps of an ink jet recording head that includes etching simultaneously the second electrode layer, the piezoelectric layer, and the first electrode layer so that a portion of the diaphragm is exposed. It is this method step found in the claim, as it is claimed in the combination of that has not been found, taught or suggested by the prior art of record, which makes these claims allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

6. Applicant's arguments filed 3/14/2007 have been fully considered but they are not persuasive.

Applicant's argument that Hasegawa does not disclose etching simultaneously a second electrode layer, a piezoelectric layer and a first electrode layer so that a portion of a diaphragm is exposed is acknowledge. Hasegawa does disclose the structural features of the claims. Claims 21-24 & 30-33 are apparatus claims. To obtain patentability of apparatus claims, the apparatus claims must be **structurally** distinguishable from prior art to.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication With The USPTO

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Feggins whose telephone number is 571-272-2254. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Luu Matthew can be reached on 571-272-7663. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

kf


K. FEGGINS
PRIMARY EXAMINER